

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

Claim 1 (Currently Amended):        A manufacturing method for a semiconductor device comprising ~~the steps of:~~

semi-full dicing a semiconductor wafer so as to leave a dicing residual portion with a predetermined thickness between devices on the semiconductor wafer;

providing ~~forming~~ a protective layer having a chemical etching resistant property on an element formation face of the semiconductor wafer, wherein the protective layer is bonded to the semiconductor wafer using a bonding agent having a chemical etching resistant property; and

chemically etching the semiconductor wafer having the protective layer provided ~~formed~~ on the element formation face from the rear face side so as to polish the rear face of the semiconductor wafer, to remove the dicing residual portion to divide the semiconductor wafer into individual semiconductor chips, and to remove damaged areas in a cut face of the semiconductor wafer resulting from the semi-full dicing process.

Claim 2 (Currently Amended):        The manufacturing method for a semiconductor device as defined in claim 1, further comprising ~~the step of:~~

prior to the semi-full dicing ~~step~~, carrying out an electrical test on the semiconductor wafer by means of probing.

Claim 3 (Currently Amended): The manufacturing method for a semiconductor device as defined in claim 1, further comprising ~~the step of~~:

removing the protective layer from the semiconductor chips after the chemical etching ~~step~~.

Claim 4 (Currently Amended): The manufacturing method for a semiconductor device as defined in claim 1, wherein in the semi-full dicing ~~step~~, the semiconductor wafer is subjected to semi-full dicing from the element formation face so as to leave a dicing residual portion with a predetermined thickness on the rear face side of the semiconductor wafer.

Claim 5 (Canceled)

Claim 6 (Withdrawn): The manufacturing method for a semiconductor device as defined in claim 1, wherein in the semi-full dicing step, the semiconductor wafer is subjected to semi-full dicing from the rear face so as to leave a dicing residual portion with a predetermined thickness on the element formation face side of the semiconductor wafer.

Claim 7 (Withdrawn): The manufacturing method for a semiconductor device as defined in claim 6, wherein the protective layer is formed on the element formation face of the semiconductor wafer.

Claim 8 (Withdrawn): A manufacturing method for a semiconductor device comprising the steps of:

polishing a rear face of a semiconductor wafer that is opposite to an element formation face of the semiconductor wafer;

semi-full dicing the semiconductor wafer so as to leave a dicing residual portion with a predetermined thickness between devices on the semiconductor wafer;

forming a protective layer having a chemical etching resistant property on the element formation face of the semiconductor wafer; and

chemically etching the semiconductor wafer having the protective layer formed on the element formation face from the rear face side so as to remove damaged areas on the rear face of the semiconductor wafer resulting from the rear-face polishing step, to remove the dicing residual portion to divide the semiconductor wafer into individual chips, and to remove damaged areas in a cut face of the semiconductor wafer resulting from the semi-full dicing step.

Claim 9 (Previously Presented): The manufacturing method for a semiconductor device as defined in claim 1, wherein the protective layer is a film.

Claim 10 (Previously Presented): The manufacturing method for a semiconductor device as defined in claim 1, wherein the protective layer is a chemical etching resistant film of an ultraviolet separation type, which has a reduction in adhesive strength upon irradiation with ultraviolet rays.

Claim 11 (Previously Presented): The manufacturing method for a semiconductor device as defined in claim 1, wherein the protective layer is a chemical etching resistant film of a thermal type, which has a reduction in adhesive strength upon application of heat.

Claim 12 (Original): The manufacturing method for a semiconductor device as defined in claim 1, wherein the protective layer is a chemical etching resistant film of a sticking type, which has an adhesive strength that allows the individually divided semiconductor chips to be separated from the protective layer one by one.

Claim 13 (Currently Amended): The manufacturing method for a semiconductor device as defined in claim 1, further comprising holding the protective layer with a uniform tension during the chemical etching ~~step~~.

Claim 14 (Previously Presented): The manufacturing method for a semiconductor device as defined in claim 13, wherein the uniform tension is maintained on said protective layer by a protective layer holding means placed on a surface of said

protective layer that is opposite to the surface of said protective layer on which the semiconductor wafer is affixed.

Claim 15 (Previously Presented) The manufacturing method for a semiconductor device as defined in claim 13, wherein the uniform tension is maintained on said protective layer by a protective layer holding means placed on the same surface of said protective layer as the semiconductor wafer.

Claim 16 (Previously Presented): The manufacturing method for a semiconductor device as defined in claim 1, further comprising placing a protective layer holding means having a chemical etching resistant property on a peripheral portion of the protective layer so as to surround the entire circumference of the semiconductor wafer.

Claim 17 (Previously Presented): The manufacturing method for a semiconductor device as defined in claim 16, wherein the protective layer holding means has a ring shape with a flat bonding face for bonding with the protective layer.

Claim 18 (Currently Amended): The manufacturing method for a semiconductor device as defined in claim 17, wherein the protective layer holding means has a draining means for draining etchant remaining inside the protective layer holding means during the chemical etching step.

Claim 19 (Previously Presented): The manufacturing method for a semiconductor device as defined in claim 18, wherein the draining means is formed as grooves extending in a radial manner.

Claim 20 (Withdrawn): A method of manufacturing a semiconductor device, comprising:

dicing a semiconductor wafer by cutting grooves to a predetermined depth into a first face thereof;

forming a protective layer resistant to chemical etching on a second face of the semiconductor wafer; and

chemically etching the semiconductor wafer having the protective layer formed thereon so as to simultaneously polish the first face of the semiconductor wafer, remove residual portions of the semiconductor wafer resulting from cutting the grooves to thereby divide the semiconductor wafer into individual semiconductor chips, and remove damaged areas on portions of the semiconductor wafer exposed by the dicing.

Claim 21 (Withdrawn): The method as defined in claim 20, further comprising:

removing the protective layer from the semiconductor chips after the chemical etching.

Claim 22 (Withdrawn): The method as defined in claim 21, wherein the protective layer is removed using irradiation.

Claim 23 (Withdrawn): The method as defined in claim 21, wherein the protective layer is removed using heat.

Claim 24 (Withdrawn): The method as defined in claim 20, wherein the semiconductor wafer having the protective layer formed thereon is chemically etched by immersion into an etchant.

Claim 25 (Withdrawn): The method as defined in claim 20, wherein the semiconductor wafer having the protective layer formed thereon is chemically etched by dispensing an etchant onto the first face of the semiconductor wafer.

Claim 26 (Withdrawn): The method as defined in claim 20, wherein the second face of the semiconductor wafer is an element formation face.

Claim 27 (Withdrawn): The method as defined in claim 20, further comprising:

arranging the semiconductor wafer having the protective layer formed thereon on a carrier frame prior to the chemical etching.

Claim 28 (Withdrawn): The method as defined in claim 20, further comprising:

maintaining uniform tension on the semiconductor wafer having the protective layer formed thereon during the chemical etching.

Claim 29 (Withdrawn): A method of manufacturing a semiconductor device, comprising:

polishing a first face of a semiconductor wafer;

dicing the semiconductor wafer by cutting grooves to a predetermined depth into a second face thereof;

forming a protective layer resistant to chemical etching on the second face of the semiconductor wafer; and

chemically etching the semiconductor wafer having the protective layer formed thereon so as to simultaneously remove portions of the first face of the semiconductor wafer damaged by the polishing, remove residual portions of the semiconductor wafer resulting from cutting the grooves to thereby divide the semiconductor wafer into individual semiconductor chips, and remove damaged areas on portions of the semiconductor wafer exposed by the dicing.

Claim 30 (Withdrawn): The method as defined in claim 29, further comprising:

removing the protective layer from the semiconductor chips after the chemical etching.



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Claim 31 (Withdrawn): The method as defined in claim 30, wherein the protective layer is removed using irradiation.

Claim 32 (Withdrawn): The method as defined in claim 30, wherein the protective layer is removed using heat.

Claim 33 (Withdrawn): The method as defined in claim 29, wherein the semiconductor wafer having the protective layer formed thereon is chemically etched by immersion into an etchant.

Claim 34 (Withdrawn): The method as defined in claim 29, wherein the semiconductor wafer having the protective layer formed thereon is chemically etched by dispensing an etchant onto the first face of the semiconductor wafer.

Claim 35 (Withdrawn): The method as defined in claim 29, wherein the second face is an element formation face of the semiconductor wafer.

Claim 36 (Withdrawn): A method of manufacturing a semiconductor device, comprising:

forming a protective layer resistant to chemical etching on a first face of a semiconductor wafer;

dicing the semiconductor wafer by cutting grooves to a predetermined depth into a second face thereof; and

chemically etching the semiconductor wafer having the protective layer formed thereon so as to simultaneously polish the second face of the semiconductor wafer, remove residual portions of the semiconductor wafer resulting from cutting the grooves to thereby divide the semiconductor wafer into individual semiconductor chips, and remove damaged areas on portions of the semiconductor wafer exposed by the dicing.

Claim 37 (Withdrawn): The method as defined in claim 36, further comprising:

removing the protective layer from the semiconductor chips after the chemical etching.

Claim 38 (Withdrawn): The method as defined in claim 37, wherein the protective layer is removed using irradiation.

Claim 39 (Withdrawn): The method as defined in claim 37, wherein the protective layer is removed using heat.

Claim 40 (Withdrawn): The method as defined in claim 36, wherein the semiconductor wafer having the protective layer formed thereon is chemically etched by immersion into an etchant.

Claim 41 (Withdrawn): The method as defined in claim 36, wherein the semiconductor wafer having the protective layer formed thereon is chemically etched by dispensing an etchant onto the second face of the semiconductor wafer.

Claim 42 (Withdrawn): The method as defined in claim 36, wherein the first face is an element formation face of the semiconductor wafer.

Claim 43 (New): A method for manufacturing a semiconductor device comprising:

dicing a semiconductor wafer so as to leave a residual portion with a predetermined thickness between devices on the semiconductor wafer;

providing a protective layer having a chemical etching resistant property on an element formation face of the semiconductor wafer, wherein the protective layer is bonded to the semiconductor wafer using a bonding agent having a chemical etching resistant property and wherein a protective layer holder with radially-extending grooves formed therein is attached to a peripheral portion of the protective layer;

chemically etching with etchant the semiconductor wafer having the protective layer provided on the element formation face from the rear face side so as to polish the rear face of the semiconductor wafer, to remove the residual portion to divide the semiconductor wafer into individual semiconductor chips, and to remove damaged areas on portions of the semiconductor wafer exposed by the dicing; and

draining residual etchant from the protective layer holder via the radially-extending grooves formed therein.

Claim 44 (New): The method as defined in claim 43, further comprising:  
electrically testing the semiconductor wafer prior to dicing.

Claim 45 (New): The method as defined in claim 43, further comprising:  
removing the protective layer from the semiconductor chips after the chemical  
etching.

Claim 46 (New): The method as defined in claim 45, wherein the protective  
layer is removed using ultraviolet irradiation.

Claim 47 (New): The method as defined in claim 45, wherein the protective  
layer is removed using heat.

Claim 48 (New): The method as defined in claim 43, wherein the dicing of  
the semiconductor wafer is from the element formation face so as to leave the residual  
portion with a predetermined thickness on the rear face side of the semiconductor wafer.

Claim 49 (New): The method as defined in claim 43, wherein the protective  
layer is a chemical etching resistant film of a thermal type, which has a reduction in  
adhesive strength upon application of heat.